

U.S. Non-Provisional Application of PANDA et al., atty. dkt. 071469-0309182

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Claims 9 and 16 have been amended. Claim 15 has been canceled. Accordingly, after entry of this Amendment, claims 1-14 and 16 will remain pending. Since claims 1-8 have been withdrawn from further consideration, only claims 9-14 and 16 are currently being examined.

In the Office Action dated March 8, 2006, the Examiner acknowledged the Applicant's traversal of the Restriction Requirement. However, the Examiner stated that the requirements of the Restriction Requirement were properly met and, accordingly, made the Restriction Requirement final. While the Applicant respectfully disagrees with this determination, the Applicant acknowledges the Examiner's decision.

In the Office Action, the Examiner rejected claims 9-11 and 13-16 under 35 U.S.C. § 102(b) as being anticipated by Mimura et al. (WO 02/23609). In addition, claims 9-16 were rejected under 35 U.S.C. § 102(b) as anticipated by Kojima et al. (U.S. Patent No. 6,433,297). Next, the Examiner rejected claims 9-16 under 35 U.S.C. § 102(b) as anticipated by Yin et al. (U.S. Patent No. 6,379,575). Finally, claim 12 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Mimura et al. The Applicant respectfully disagrees with each of these rejections and, therefore, respectfully traverses the same.

Claim 9 has been amended to incorporate the limitations formerly found in claim 15, which is now canceled. The Applicant respectfully submits that claims 9-14 and 16 are patentably distinguishable over the references cited by the Examiner because they now recite a plasma processing system for etching a silicon-comprising substrate that combines a number of features including, among them, means for introducing a Noble gas and means for introducing a reactive gas that cooperate, during etching, to replace a flow rate of HBr with a flow rate of a Noble gas by an amount up to and including 80%. None of the references describe or suggest such a combination of features. As a result, the Applicant respectfully submits that the claims are patentable over the references cited by the Examiner.

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Mimura et al.¹ describes a high speed silicon etching method with different etching gases as described in paragraphs [0052] – [0061]. (Mimura et al. at paragraphs [0052] – [0061].) Additive gases may be added as outlined in paragraphs [0063] – [0069]. (Mimura et al. at paragraphs [0063] – [0069].) There is nothing in Mimura et al., however, that describes or suggests means for introducing a Noble gas and means for introducing a reactive gas that cooperate, during etching, to replace a flow rate of HBr with a flow rate of a Noble gas by an amount up to and including 80%. As a result, Mimura et al. does not describe each and every feature as recited by claims 9-14 and 16. Accordingly, Mimura et al. cannot be relied upon to anticipate any of claims 9-14 and 16. Therefore, the Applicant respectfully requests that the Examiner withdraw this rejection of the claims.

In connection with the rejection of the claims, the Examiner relied upon case law to support a rejection of the system claims now being examined. Specifically, the Examiner stated that “it is irrelevant that the apparatus, which is taught above, does not specifically teach the etching process which is claimed by the applicant in their apparatus claims since the apparatus, which is taught above, is inherently capable of conducting such an etching process.” While the Applicant acknowledges the Examiner’s position, the Applicant respectfully submits that the mere fact that the Examiner believes an apparatus may inherently be capable of performing a particular method (which the Applicant does not concede) cannot form the basis for rejecting claims directed to an apparatus that operates in a manner not otherwise described or suggested by the cited reference.

¹ For purposes of discussing Mimura et al., the Applicant refers to U.S. Patent Application Publication No. 2004/0097079, which corresponds to the publication, in Japanese, of Mimura et al. upon which the Examiner relies to reject the claims. Accordingly, where reference is made to Mimura et al., the reference is to the U.S. Publication of the corresponding U.S. Patent Application.

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With reference to M.P.E.P. § 2112, the Applicant has excerpted the following passage.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijkkaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Odrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) (The claims were drawn to a disposable diaper having three fastening elements. The reference disclosed two fastening elements that could perform the same function as the three fastening elements in the claims. The court construed the claims to require three separate elements and held that the reference did not disclose a separate third fastening elements in the claims. The court construed the claims to require three separate elements and held that the reference did not disclose a separate third fastening element, either expressly or inherently.). >Also, "[a]n invitation to investigate is not an inherent disclosure" where a prior art reference "discloses no more than a broad genus of potential applications of its discoveries." *Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354, 1367, 71 USPQ2d 1081, 1091 (Fed. Cir. 2004) (explaining that "[a] prior art reference that discloses a genus still does not inherently disclose all species within that broad category" but must be examined to see if a disclosure of the claimed species has been made or whether the prior art reference merely invites further experimentation to find the species.<

The Applicant respectfully submits that the mere fact that the characteristic identified by the Examiner may exist in the prior art, as asserted here, is insufficient to establish inherency.

Even in view of M.P.E.P. § 2112.01, the Applicant respectfully submits that the Examiner's assertion of inherency is not applicable. In order for the Examiner to

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assert that Mimura et al. inherently describes the structure recited by claims 9-14 and 16, the Examiner must show that the prior art product is identical or substantially identical to the claimed system. As set forth in the M.P.E.P.:

Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the *prima facie* case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best*, 562 F.2d at 1255, 195 USPQ at 433. See also *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Claims were directed to a titanium alloy containing 0.2-0.4% Mo and 0.6-0.9% Ni having corrosion resistance. A Russian article disclosed a titanium alloy containing 0.25% Mo and 0.75% Ni but was silent as to corrosion resistance. The Federal Circuit held that the claim was anticipated because the percentages of Mo and Ni were squarely within the claimed ranges. The court went on to say that it was immaterial what properties the alloys had or who discovered the properties because the composition is the same and thus must necessarily exhibit the properties.).

See also *In re Ludtke*, 441 F.2d 660, 169 USPQ 563 (CCPA 1971) (Claim 1 was directed to a parachute canopy having concentric circumferential panels radially separated from each other by radially extending tie lines. The panels were separated "such that the critical velocity of each successively larger panel will be less than the critical velocity of the previous panel, whereby said parachute will sequentially open and thus gradually decelerate." The court found that the claim was anticipated by Menget. Menget taught a parachute having three circumferential panels separated by tie lines. The court upheld the rejection finding that applicant had failed to show that Menget did not possess the functional characteristics of the claims.); *Northam Warren Corp. v. D. F. Newfield Co.*, 7 F. Supp. 773, 22 USPQ 313 (E.D.N.Y. 1934) (A patent to a pencil for cleaning fingernails was held invalid because a pencil of the same structure for writing was found in the prior art.).

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As noted below, the system recited by claims 9-14 and 16 is not identical or substantially identical to the apparatus described by Mimura et al. because the system recited by claims 9-14 and 16 includes, among other features, means for introducing a Noble gas and means for introducing a reactive gas that cooperate, during etching, to replace a flow rate of HBr with a flow rate of a Noble gas by an amount up to and including 80%.

Next, the Applicant respectfully submits that neither Kojima et al. nor Yin et al. assist the Examiner with a rejection of claims 9-14 and 16. Neither Kojima et al. nor Yin et al. describe any means for introducing a Noble gas and means for introducing a reactive gas that cooperate, during etching, to replace a flow rate of HBr with a flow rate of a Noble gas by an amount up to and including 80%. Accordingly, these references also fail to describe each and every feature of the invention as recited by claims 9-14 and 16. As a result, the references cannot be relied upon to anticipate any of claims 9-14 and 16.

With respect to the rejection of claim 12 under 35 U.S.C. § 103(a) as being unpatentable over Mimura et al., the Applicant relies on the discussion above to support the conclusion that Mimura et al. does not provide any motivation to create a plasma processing system for etching including, among other features, means for introducing a Noble gas and means for introducing a reactive gas that cooperate, during etching, to replace a flow rate of HBr with a flow rate of a Noble gas by an amount up to and including 80%. Without such a suggestion, the Applicant respectfully submits that Mimura et al. is wholly inadequate as a reference to render obvious any of claims 9-14 and 16, let alone claim 12.

Each of the rejections having been addressed, the Applicant respectfully requests that the Examiner reconsider the rejections of the claims, withdraw the rejections, and pass this application quickly to issuance.

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Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account. Early favorable action on the merits of this application is respectfully requested.

Respectfully submitted,
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